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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,437	08/14/2001	Franklin D. Lomax JR.	211473US23	8138
22850	7590	04/13/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEO, LEONARD R	
			ART UNIT	PAPER NUMBER

3753

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/928,437

Applicant(s)

LOMAX ET AL.

Examiner

Leonard R. Leo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10 and 13-21 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 13-16, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 16, 2004 has been entered.

Claims 9 and 11 are cancelled, claims 1-8, 10 and 13-21 are pending, and claims 17-18 remain withdrawn.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 10, 13 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Leason et al (column 3, lines 35-38). The flat insulation element below chamber 15 is a “load-bearing zone” supporting the entire tube bundle and inherently supports at least one pound per square inch. The vertical insulation wall is “non-load bearing” and is self-supportive as applicants’ invention and is believed to support less than one pound per square inch. As evidenced by claim 19, the insulation material of the different elements or zones may be the same material.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 8 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leason et al et al in view of Gebhardt.

Leason et al et al discloses all the claimed limitations except a planar polygonal shaped baffle.

Gebhardt discloses a tube and shell heat exchanger comprising a plurality of tubes 12-15 disposed within housing 1; and planar polygonal shaped baffles 19, 26 for the purpose of ease of manufacture and assembly.

Since Leason et al et al and Gebhardt are both from the same field of endeavor and/or analogous art, the purpose disclosed by Gebhardt would have been recognized in the pertinent art of Leason et al et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Leason et al et al planar polygonal shaped baffles for the purpose of ease of manufacture and assembly as recognized by Gebhardt. Forming a planar baffle is easier than deforming the mating tube surfaces. Forming a polygonal shaped baffle is simpler than forming a circular baffle with precision. Furthermore, the shape of the baffle is nothing more than a mere change in shape producing no new and/or unexpected results and solving no stated problem.

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Regarding claim 6, the baffles 19, 26 of Gebhardt are disposed in sealing grooves 24, 29.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leason et al et al in view of Gebhardt as applied to claims 3-6, 8 and 20-21 above, and further in view of Uggerby.

The combined teachings of Leason et al et al and Gebhardt lacks a resilient seal.

Uggerby discloses a tube and shell heat exchanger comprising a plurality of tubes 9 disposed within housing 8, and a plurality of baffles 24 with resilient seal 25 for the purpose of supporting the baffle within the housing and minimizing fluid bypass.

Since Leason et al et al and Uggerby are both from the same field of endeavor and/or analogous art, the purpose disclosed by Uggerby would have been recognized in the pertinent art of Leason et al et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Leason et al et al a resilient seal for the purpose of supporting the baffle within the housing and minimizing fluid bypass as recognized by Uggerby.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leason et al et al in view of Melnyk et al.

The device of Leason et al et al lacks a parting plane.

Melnyk et al discloses a tube and shell heat exchanger comprising a plurality of tubes 28 disposed within housing 12; baffles 26; wherein the housing is composed of two halves 14 for the purpose of ease of manufacture and assembly.

Since Leason et al et al and Melnyk et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Melnyk et al would have been recognized in the pertinent art of Leason et al et al.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Leason et al et al the housing is composed of two halves 14 for the purpose of ease of manufacture and assembly as recognized by Melnyk et al.

***Allowable Subject Matter***

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Although, Leason et al discloses an additional structure below the flat insulation element below chamber 15, there is no explicit evidence of record that the material is a refractory material.

***Response to Arguments***

The objection to the drawings under 37 CFR 1.83(a) is withdrawn.

The rejection under 35 U.S.C. 112, first paragraph, is withdrawn in view of the amendment to claim 1.

The rejection under 35 U.S.C. 112, second paragraph, is withdrawn.

The rejections in view of Cizmer and Barratt et al are withdrawn.

The rejections in view of the secondary references of Gebhardt, Uggerby and Melnyk et al for teaching their respective modifications are deemed correct for lack of any arguments by applicants.

No further comments are deemed necessary at this time.

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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3753

April 5, 2004